A Glossary of Terms and Definitions

.45 Power Chart	A graphical technique that plots the percent passing vs. sieve size. This chart is very useful in comparing aggregate gradations and specification limits
Absorptiveness	The ability of the aggregate used in the mix to absorb asphalt.
Acceptance Range	The job mix formula with the tolerances applied.
Adhesion	The binder's ability to stick to the aggregate in the paving mixture.
Adjustment	A reduction in unit bid price on failing material.
Aggregate	An inert granular material such as sand, gravel, shell, slag, or broken stone, which generally constitutes 90 to 95% of the total asphalt concrete mixture by weight.
Aggregate Blending	The process of proportionately mixing several aggregate gradations to obtain one desired aggregate gradation.
Anionic	Binder globules are electro-negatively charged.
Anti-Stripping Agent	A heat stable additive used to prevent the binder separating from the aggregate.
Artificial or Synthetic Aggregate	Aggregates resulting from the modification of raw materials, which may involve both physical and chemical changes, such as slag and fly ash.
Asphalt Cement (Performance Graded Binder)	Petroleum asphalt for use in pavements is called asphalt cement or paving asphalt. At ambient temperatures, it is a black, sticky, semisolid, highly-temperature-dependent visco-elastic material.
Asphalt Concrete	A composite of materials consisting of two components: aggregates and asphalts.

Asphalt Concrete Base Course	A foundation course consisting of graded aggregate and asphalt cement mixed in a hot mix plant (Type "BM" mixes).
Asphalt Concrete Intermediate Course	A course between the asphalt concrete base and the asphalt concrete surface course. It is also referred to as a binder course (Type "IM" mixes).
Asphalt Concrete Surface Course	A dense graded, hot mix asphalt concrete placed as the top course of a pavement structure. It is also referred to as a wearing course (Type "SM" mixes).
Base Mixes (BM)	Placed immediately below the surface course (or binder course if a binder course is found to be necessary), this layer is called the base course (Type "BM" mixes) and is the structural strength element of the asphalt concrete pavement system.
Batch Asphalt Plant	A manufacturing facility for producing hot asphalt mix that makes the product in batches, rather than continuously.
Carry-over	The depositing of finer material in a bin that should contain the next larger size aggregate.
Cationic	Binder globules are electro-positively charged.
Coarse Aggregate	All the material retained on and above No. 4 (4.75 mm) sieve.
Coarse Aggregate Angularity (CAA)	The angularity of coarse aggregate.
Cohesion	The binder's ability to hold the aggregate particles in place in the finished pavement.
Cold Aggregate Bins and Feeders	Containers that store aggregate and accurately feed required amounts of each size to comply with specifications and to maintain a balance of material in each of the hot bins.
Cold Elevator	Conveyor belt that picks up the blended aggregate at the cold feed and feeds it to the dryer in a continuous flow.
Combined Gradation	A mathematically-determined theoretical combination of aggregates based on their relative percent volume in the mixture.
Consensus Property Testing	Testing that places consensus requirements on coarse and fine aggregate angularity, flat and elongated particles, and clay content.
Consistency	The degree of fluidity or plasticity of the binder at any particular temperature.
Control Chart	A control chart is a graphical record of data taken from a repetitive process, and is used to alert the Producer as to when to investigate the process.

Cutback Asphalt	Asphalt cement which has been liquefied by blending it with petroleum solvent. There are three types: *Rapid-Curing* (asphalt and a volatile solvent or light distillate), *Medium-Curing* (asphalt and a solvent of intermediate volatility or medium distillate) and *Slow-Curing* (asphalt and an oily diluent of low volatility).
Cutting Back	The process of dissolving a binder in selected solvents.
Design Range	The range from which the job-mix is chosen.
Drum-Type Asphalt Plant	A manufacturing facility for producing HMA. It manufactures HMA continuously, rather than in batches.
Dryer	A revolving cylinder, usually from 1 to 3 meters in diameter and 6 to 12 meters long, in which aggregate is dried and heated.
Dry Mixing Time	The time between the release of the dry batch into the pugmill and the release of the asphalt into the pugmill.
Ductility	An indication of the cohesiveness (stickiness) of an asphalt.
Durability	The binder's resistance to the effects of traffic, water, air, and temperature changes.
Dust Collector (aka Emissions Control System)	A fan in the unit furnishing the draft that controls the gas and air flow for dryer combustion system and dust collection.
Effective Asphalt Content	The volume of asphalt not absorbed by the aggregate.
Emissions Control System (aka Dust Collector)	A fan in the unit furnishing the draft that controls the gas and air flow for the dryer combustion system and dust collection.
Emulsified Asphalt	A suspension of asphalt in water containing an emulsifying agent, such as soap.
Fatigue Resistance	The asphalt pavement's resistance to repeated flexing or slight bending under wheel loads (e.g., traffic).
Fine Aggregate	All the material passing the No. 4 (4.75 mm) sieve, consisting of natural sand, crushed stone sand or crushed gravel stone dust.
Fine Aggregate Angularity (FAA)	The angularity of fine aggregate.
Fines to Asphalt Ratio (F/A)	Indicates the film thickness of coated particles.

Flat & Elongated (F/E)	The dimensional ratio at which an aggregate particle is considered too flat or too elongated.
Flash Point	The temperature at which asphalt will instantaneously flash in the presence of an open flame.
Flexibility	The asphalt pavement's ability to adjust to gradual settlements and movements in the subgrade without cracking.
Gradation	The particle size distribution of an aggregate, which helps determine the properties of pavement materials.
Hot Aggregate Storage Bins (aka Hot Bins)	Bins that temporarily store the heated and separated aggregates in the various size fractions required, prior to their final proportioning into the mixer.
Hot Elevator	Carries the hot, dried aggregate from the dryer and deposits it onto a screening unit (also called a screen deck or a plant screen).
Hot Mix	A mixture of graded aggregates with asphalt cement, heated and mixed in a pugmill and placed hot on the road.
Impermeability	The resistance of an asphalt pavement to the passage of air and water into or through it.
Intermediate Mixes (IM)	Used as a binder course between the surface course and base course when needed to add strength and thickness to the pavement structure.
Job Mix Formula (JMF)	The optimized mixture of aggregate and asphalt binder type; the required AC and Gradation targets that the contractor must produce for the project
Liquid Asphalt	Asphalt cement which has been liquefied with petroleum solvents or emulsified.
Lot	The quantity of material to be checked for compliance with specifications.
Mean	The average of two or more numbers.
Medium Curing Cutback Asphalt	Asphalt cement blended with a kerosene-type material.
Mineral Filler	Finely divided mineral matter, such as dust rock, including limestone dust, slag dust, hydrated lime, hydraulic cement, or other suitable mineral matter.
Mixer (Pugmill)	Modern hot mix asphalt plants use pugmill mixers. These consist of twin shafts equipped with paddles for mixing the aggregate and asphalt into a homogeneous mass.

Natural Aggregate	An aggregate made of natural material such as granite, quartz, gravel, etc. (Pit or back run, or processed aggregates)
Normal Distribution	A pattern for the distribution of a set of data which follows a bell shaped curve.
Penetration	A method of classification that is used to determine the consistency and hardness of asphalt.
Performance Graded Binder	A dark brown to black solid or semi-solid asphalt substance that is found in natural beds or is obtained as a residue in petroleum refining. The terms performance graded binder and asphalt cement are used interchangeably.
Percent Binder (P_b)	The percent of asphalt binder in the mix by mass (as a percent of the total mix mass).
Plans	Drawings that show the location, character, dimensions, and details of the work to be done.
Plant Screens	Screens located between the dryer and hot bins which separate the heated aggregate into the proper hot bin sizes.
Prime Coat	An initial application of low viscosity liquid asphalt, such as RC-70, MC-70, and RC-250, to an absorbent base prior to placing an asphaltic course. Emulsified asphalts such as CRS-2, CMS-2, and CMS-2h may also be used.
Process Tolerance	The amount of deviation allowed from the job mix formula.
Production Tolerance	The allowable target-miss that is allowed during production before price adjustments are applied.
Pugmill	Chamber in which the batch is mixed and discharged into the truck or hauling unit.
Purity	The degree to which the binder is pure (i.e., free from impediments such as moisture).
Quality Assurance	The systematic monitoring and evaluation of various aspects of a project, to maximize the probability that minimum standards of quality are being attained by the production process.
Random Sample	Samples taken from locations which have been selected solely by chance. These samples differ from representative samples, in that there is no judgment involved in trying to select the best, the worst, or "in-between" spot for sampling.
RAP	Reclaimed asphalt pavement.
Rapid Curing Cutback Asphalt	Asphalt cement blended with a naphtha or gasoline-type material.

Referee System	A system to allow for additional sampling and testing when there is doubt that the original test results are valid.
Representative Sample	A relatively small portion of material having the physical and chemical properties as the group or lot from which it is taken.
Sample Splitter	A device used to divide samples of aggregate and other granular materials.
Sampling Device	A device used to obtain a representative sample of aggregates.
Sampling Gates	Gates or windows in the sides of the hot bins that allow the technician to sample aggregates at the plant.
Sand Equivalent (SE)	The relative proportions of fine dust or clay-like materials in fine aggregate (or granular soils).
Screening Unit (Plant Screens or Screen Deck)	Screens located between the dryer and hot bins which separate the heated aggregate into the proper hot bin sizes.
Sieve Analysis	The process of determining the distribution of particle sizes, expressed as a percent of the total dry weight. It is used to determine the gradation or distribution of aggregate particle sizes within a given sample of aggregate material.
Skid Resistance	The ability of an asphalt surface to minimize skidding or slipping of vehicle tires, particularly when wet.
Slurry	A mixture of aggregate, asphalt emulsion, and filler, and water, which are mixed together according to a laboratory's design-mix formula.
Special Provisions	Additions or revisions to the standard or supplemental specifications that are applicable only to an individual project.
Special or Supplemental Specifications	Approved additions and revisions to the standard specifications.
Specific Gravity	A unit-less ratio of a material's density relative to water when both are at the same temperature (i.e., if we say a material has a specific gravity of 2, then it has twice the mass of water for a given volume. The term 15.6°C/15.6°C indicates that both the asphalt and water weights were measured at 15.6°C.
Stability	The asphalt pavement's ability to resist displacement (e.g., shoving and rutting) and shearing stress under loads (e.g., traffic). .
Standard Deviation	A measure of variability indicating the amount of variation from the mean.

Standard Specifications	Directions, provisions, and requirements for performing the work illustrated and described in the plans. The items in the standard specifications relate to or illustrate the method and manner of performing the work or describe the qualities and quantities of materials and labor to be furnished under the contract.
Statistical Control	When repeated measurements from a process are normally distributed about a target value.
Statistics	A mathematical analysis of accumulated data.
Storage Silos	Silos that are well insulated, heated, near air tight, and are designed to hold hot mix for long periods of time (up to one week).
Stratified Random Sample	Samples taken from equal portions of a lot at locations which have been selected solely by chance.
Stripping	Separation of asphalt binder film from aggregate surfaces.
Subbase	The layer of aggregate material laid on the subgrade.
Subgrade	The native material (i.e., level layer of rock or earth) upon which the foundation of a road is constructed.
Superpave	Superpave is an acronym for Superior Performing Asphalt Pavements, a comprehensive asphalt mix design, evaluation, and analysis system.
Surface Mixes (SM)	The upper most layer of the pavement structure is called the surface or wearing course.
Surge Silos	Silos that are usually insulated, but unheated and are designed to hold hot mix for short periods of time (up to several hours) between truck arrivals.
Tack Coat	A thin application of emulsified asphalt to an old pavement or base. It may be used to secure the bond where the mix is laid in more than one course.
Tell-tale Lever	A device on the hot bins of a continuous mix plant that indicates when the material level in the bin is too low.
Temperature Susceptibility	The effect of temperature on a binder's viscosity and elasticity.
Tensile Strength Ratio (TSR)	Measures the strength loss resulting from damage caused by stripping under laboratory-controlled accelerated freeze-thaw conditioning.
Thermoplastic Material	A plastic that softens when heated and hardens when cooled without changing its engineering properties.
Thin Binder Film	The film coating aggregate particles.

Trial and Error Method	The method used to determine an optimum combination of aggregates.
Total Asphalt Content	The amount of asphalt that must be added to the mixture to produce the desired mix qualities.
Variability	Changeability of the product.
Viscosity	A measure of liquid's resistance to flow.
Void Content	Empty spaces within the aggregate particle that can become filled with water, binder, or both.
Voids Filled with Asphalt	The percentage of voids in the compacted aggregate mass that are filled with asphalt cement; also known as the Asphalt Void Ratio.
Voids in the Mineral Aggregate (VMA)	The air void spaces that exist between the aggregate particles in a compacted paving mixture, including spaces filled with asphalt.
Voids in the Total Mixture (VTM)	The part of the compacted mixture not occupied by aggregate or asphalt, expressed as a percentage of the total volume. VTM is synonymous with Air Voids.
Volumetric Batch Plant	An asphalt concrete mixing plant that proportions aggregate and asphalt constituents into the mix by volumetrically measured batches.
Washed Sieve Analysis	The method used in Virginia to determine the proportions of various particle sizes in a mineral aggregate.
Weigh Box	A weigh box or hopper in batch plants connected with the scales, which weighs each aggregate fraction before dropping the aggregate into the pugmill.
Weigh Batch Plant	An asphalt concrete mixing plant that proportions the aggregate constituents into or volume.
Weight Tolerances	Permissible variations from the exact desired proportions of aggregates and asphalt material as delivered into the pugmill.
Wet Mixing Time	The time between the release of the asphalt into the pugmill and the opening of the pugmill discharge gate.
Workability	The ease with which a paving mixture can be placed and compacted.